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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/642,655	08/22/2000	Edward Brittain Stokes	040849/0143	9163

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EXAMINER

ZIMMERMAN, GLENN

ART UNIT

PAPER NUMBER

2879

DATE MAILED: 12/10/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/642,655

Applicant(s)

STOKES ET AL. 

Examiner

Glenn Zimmerman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 September 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) 32-35 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21-31, 36-38, 41 and 42 is/are allowed.
- 6) ☒ Claim(s) 1-3, 7, 9, 10, 12 and 39 is/are rejected.
- 7) ☒ Claim(s) 4-6, 8, 11, 13-20 and 40 is/are objected to.
- 8) ☒ Claim(s) 1-38 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on September 25, 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

Amendment, filed on September 25, 2002, has been entered and acknowledged by the examiner.

### ***Election/Restrictions***

Applicant's election of claims 1-31 and 36-38 in Paper No. 7 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

### ***Drawings***

The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on September 25, 2002 have been approved.

### ***Allowable Subject Matter***

Claims 21-31, 36-38 and 41-42 are allowed.

Claims 4-6, 8, 11, 13-20 and 40 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 4, the following is an examiner's statement of reasons for allowance: The prior art of record neither shows nor suggests a device including the combination of all the limitations as set forth in claim 4, and specifically wherein: the radiation source comprises a blue light emitting diode; and the luminescent material comprises a yellow light emitting phosphor layer or a dispersion of a yellow light emitting phosphor in a polymer material could not be found elsewhere in prior art.

Regarding claim 5, claim 5 is allowed for the reasons given in claim 4, because of its dependency status on claim 4.

Regarding claim 6, the following is an examiner's statement of reasons for allowance: The prior art of record neither shows nor suggests a device including the combination of all the limitations as set forth in claim 6, and specifically wherein the radiation source comprises an ultraviolet light emitting diode and the luminescent material emits white light in response to the ultraviolet radiation emitted by the light emitting diode could not be found elsewhere in prior art.

Regarding claim 8, the following is an examiner's statement of reasons for allowance: The prior art of record neither shows nor suggests a device including the combination of all the limitations as set forth in claim 8, and specifically wherein the radiation scattering material comprises a layer of packed radiation scattering particles could not be found elsewhere in prior art.

Regarding claim 11, the following is an examiner's statement of reasons for allowance: The prior art of record neither shows nor suggests a device including the combination of all the limitations as set forth in claim 11, and specifically the radiation

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scattering particles comprise 140 to 240 nm particles selected from a group consisting of  $\text{TiO}_2$ ,  $\text{BaTiO}_3$ ,  $\text{Al}_2\text{O}_3$ ,  $\text{SiO}_2$ ,  $\text{CaCO}_3$ ,  $\text{BaSO}_4$  and diamond could not be found elsewhere in prior art.

Regarding claim 13, the following is an examiner's statement of reasons for allowance: The prior art of record neither shows nor suggests a device including the combination of all the limitations as set forth in claim 13, and specifically wherein the radiation scattering particles in a carrier medium comprise at least one of the following:

a) at least one light or UV radiation scattering particle layer in a glass passivation layer directly over the light emitting diode; and b) light or UV radiation scattering particles in a silicone layer over the light emitting diode or over and on side of the light emitting diode could not be found elsewhere in prior art.

Regarding claims 14-15, claims 14-15 are allowed for the reasons given in claim 13, because of their dependency status on claim 13.

Regarding claim 16, the following is an examiner's statement of reasons for allowance: The prior art of record neither shows nor suggests a device including the combination of all the limitations as set forth in claim 16, and specifically wherein the radiation scattering particles in a carrier medium comprise at least two layers of  $\text{TiO}_2$  particles in about a 1 micron to about a 2 micron thick silica layer arranged to achieve photonic crystal effects could not be found elsewhere in prior art.

Regarding claim 17, the following is an examiner's statement of reasons for allowance: The prior art of record neither shows nor suggests a device including the combination of all the limitations as set forth in claim 17, and specifically wherein a

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mean diameter of the radiation scattering particles is between  $\lambda /3$  and  $\lambda /2$ , where  $\lambda$  is the peak emission wavelength of the radiation source could not be found elsewhere in prior art.

Regarding claim 18, claim 18 is allowed for the reasons given in claim 17, because of its dependency status on claim 17.

Regarding claim 19, the following is an examiner's statement of reasons for allowance: The prior art of record neither shows nor suggests a device including the combination of all the limitations as set forth in claim 19, and specifically wherein the radiation scattering material does not luminesce and the luminescent material does not substantially scatter light or UV radiation could not be found elsewhere in prior art.

Regarding claims 20 and 40, claims 20 and 40 are allowed for the reasons given in claim 19, because of their dependency status on claim 19.

Regarding claim 21, the following is an examiner's statement of reasons for allowance: The prior art of record neither shows nor suggests a white light emitting device including the combination of all the limitations as set forth in claim 21, and specifically radiation scattering particles in a packed layer or in a carrier medium over the light emitting diode; and a phosphor or an organic dye which emits radiation having a second peak wavelength in response to incident light wherein the phosphor or organic dye is located over and separately from the radiation scattering particles located in the packed layer could not be found elsewhere in prior art.

Regarding claims 22-31 and 41, claims 22-31 and 41 are allowed for the reasons given in claim 21, because of their dependency status on claim 21.

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Regarding claim 36, the following is an examiner's statement of reasons for allowance: The prior art of record neither shows nor suggests a light emitting device including the combination of all the limitations as set forth in claim 36, and specifically a luminescent material layer which does not substantially exhibit Mie scattering; and a radiation scattering phosphor layer, which exhibits Mie scattering of the radiation source radiation, located between the radiation source and the luminescent material could not be found elsewhere in prior art.

Regarding claims 37, 38 and 42, claims 37, 38 and 42 are allowed for the reasons given in claim 36, because of their dependency status on claim 36.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 2 and 39 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 18 and 19 of U.S.

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Patent No. 6,294,800. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims identicalness would have been obvious to a person having ordinary skill in the art.

Claim 3 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 18-20 of U.S. Patent No. 6,294,800. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claim's identicalness would have been obvious to a person having ordinary skill in the art.

Claim 7 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 18-20 of U.S. Patent No. 6,294,800 in view of U.S. Patent 5,847,507.

Regarding claim 7, Duggal et al. teach all the limitations of claim 7, but fail to teach wherein the luminescent material comprises an organic dye. Butterworth et al. in the analogous art teach wherein the luminescent material comprises an organic dye. Additionally, Duggal et al. teach incorporation of such an organic dye to improve efficiency and reduce light blocking (**col. 3 lines 65-67 and col. 4 lines 1-2**).

Consequently it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use an organic dye in luminescent material of Duggal et al. since such a modification would improve efficiency and reduce light blocking as taught by Butterworth et al.

Claims 9 and 10 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 18-21 of U.S.



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Patent No. 6,294,800. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims' identicalness would have been obvious to a person having ordinary skill in the art.

Claim 12 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 18-21 of U.S. Patent No. 6,294,800 in view of Butterworth et al. U.S. Patent 5,847,507.

Regarding claim 12, Duggal et al. teach all the limitations of claim 12, but fail to teach a package supporting the radiation source of a light emitting diode. Butterworth et al. in the analogous art teach a package supporting the radiation source of a light emitting diode (**Figure 2 ref. 110 and 120**). Additionally, Butterworth et al. teaches incorporation of such a light emitting diode to improve the structure by allowing shifting of the LED emitted light from a shorter frequency to a longer frequency through fluorescent materials (**col. 1 lines 22-30**) a package for a light emitting device and LED is conventional.

Consequently it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use a packaged LED in device of Duggal et al. since such a modification would allow for light shifting as taught by Butterworth et al.

Consequently it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use package in the light emitting device of Duggal et al., since such a modification would be conventional.

***R sponds to Arguments***

Applicant's arguments with respect to claims 1-3, 7, 9, 10, 12 and 39 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Glenn Zimmerman whose telephone number is (703) 308-8991. The examiner can normally be reached on M-F.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (703) 305-4794. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7382 for regular communications and (703) 308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is n/a.

  
Glenn Zimmerman  
December 6, 2002.

  
ASHOK PATEL  
PRIMARY EXAMINER